Statement of Mandate 2015–2016

Environment

NOVA SCOTIA

Nova Scotia Environment

Statement of Mandate

2015-2016

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Message from the Minister and Deputy Minister of Environment

Nova Scotia Environment's mandate is supported by five guiding pieces of legislation: the *Environmental Goals and Sustainable Prosperity Act;* the *Environment Act;* the *Wilderness Areas Protection Act;* the *Special Places Protection Act;* and the *Water Resources Protection Act*. To achieve our mandate, we work with departments, governments, organizations and individuals on programs and services that protect our air, land and water.

In 2015-2016, the department will implement provincial air management zones to align with the national Air Quality Management System. This includes the use of more stringent Canadian Ambient Air Quality Standards for particulate matter and ozone.

We will be continuing to legally protect sites identified in the province's Parks and Protected Areas Plan as wilderness areas or nature reserves. This work entails developing management plans with partners and identifying opportunities for public and resource use and ecological sites at risk.

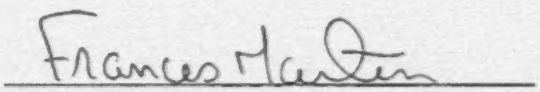
We will continue to implement and improve the 2013 contaminated sites regulations so that affected sites are remediated and put back into productive use - providing environmental and economic benefits to our communities. In 2015-2016, we will also continue to collaborate with other Atlantic provinces and industry partners on harmonized approaches to contaminated sites management.

We will continue to develop a strategy for guiding the "greening" of our economy, incorporating public feedback as appropriate and that is consistent with other actions and plans, such as the One Nova Scotia Commission Report.

After consulting widely during 2014, the department will develop new solid waste regulations that reflect opportunities for new programs, research and development and product stewardship.

We will continue to collaborate with our partners to carry out our mandate to protect the environment and health of all Nova Scotians, while growing a sustainable, greener economy.

Honourable Randy Delorey
Minister of Environment



Frances Martin
Deputy Minister of Environment

1. Mandate/Mission/Vision

Mandate

The mandate of Nova Scotia Environment is to:

- Support and promote the protection, enhancement and prudent use of the environment (*Environment Act*).
- Provide for the establishment, management, protection and use of wilderness areas (*Wilderness Areas Protection Act*).
- Provide for the preservation, protection and study of ecological sites that are considered important parts of the natural heritage of the Province and promote understanding and appreciation of same among the people of the Province (*Special Places Protection Act*).
- Promote the interconnections between the health of the economy, the environment and the people of the Province and promote the Province's environmental assets as essential to the long-term prosperity of the Province (*Environmental Goals and Sustainable Prosperity Act*).

Vision

Nova Scotia will have a healthy environment that sustains our communities and supports our economy.

Mission

Nova Scotia Environment provides leadership through science based decision making and regulation to ensure that our environment is valued, protected and improved.

2. Strategic Outcomes and Government Priorities[1]

Nova Scotia Environment's (NSE) strategic outcomes are based on its Mandate and linked to the Vision, Mission, Performance Measures and Government's priorities.

NSE aligns resources to both long-term and short-term projects and performance measures each year that are designed to show progress in the ultimate protection of the environment for future generations and, as well, contribute to Government priorities.

Below are NSE's strategic outcomes for fiscal 2015-2016 with examples of projects for each strategic outcome. Where applicable, NSE will also show how these projects contribute to Government priorities for the coming year.

Strategic Outcome #1:

Protection, enhancement and prudent use of the environment

Government Priorities Supported:

- **Economy** - Goal: Create climate for private sector and social enterprise economic growth to support OneNS economic goals.
- **Demographics** - Goal: Increase net interprovincial in-migration and international immigration levels; enhance wellness & health initiatives; enhance workforce participation of youth, older workers and marginalized communities; and **enhance communities and social well-being.**

Protecting the environment through its legislation, collaboration with other departments, municipalities, federal government, public and stakeholder consultation and engagement, NSE works to ensure that Nova Scotians have safe, healthy, and prosperous communities in which to work and live. Also, many of NSE's acts, regulations and policies are aimed at improving and sustaining human health.

Examples of Projects/Initiatives:

- **Modernization of the Regulations**

  In 2015-2016, NSE will continue to modernize regulations to align our resources with those activities that pose the greatest risk to our environment. We will create new rules to allow routine and lower risk activities to be responsibly carried out by qualified individuals in accordance with standards, with intervention by NSE only when non-

[1] Some of the examples used in this Statement of Mandate may support more than one government priority or more than one strategic outcome.

compliance occurs. We will also introduce new efficient processes to reduce the administrative burden for businesses and individuals, to maximize our resources.

These efforts will help us ensure the most efficient and sustainable, cost-effective delivery of our services in the coming years while creating or maintaining jobs across the Province.

- **New Air Quality Management System**

  Beginning in 2015, NSE will be implementing 'air zone management' which is a component of the national Air Quality Management System (AQMS). This will include reporting in four air zones that cover the entire province and use more stringent Canadian Ambient Air Quality Standards (CAAQS) for particulate matter (PM) and Ozone that will replace the previously used Canada-wide Standard (CWS).

- **New Emission Limits for the Electricity Sector**

  Amendments to Nova Scotia's Air Quality Regulations in November 2014 established new emission limits for the electricity sector for the next fifteen years. The new requirements are part of NSE's overall strategy to transform the electricity sector to cleaner-burning, renewable energy sources, lower greenhouse gases and increase demand-side management initiatives that will benefit electricity ratepayers. These amendments will allow us to achieve our environmental goals and improve air quality in a way that is more affordable for Nova Scotians.

- **Implementation of Contaminated Sites Regulations**

  Continued implementation of the Contaminated Sites Regulations, which became effective in July 2013, will ensure that NSE receives notification of any new contaminated sites and that these properties follow the prescribed assessment and remediation process. Remediation of contaminated sites and particularly brownfield sites will help return properties to productive use and help re-develop downtown streetscapes throughout Nova Scotia.

Performance Measures:

The Performance Measures in this document that show progress in meeting strategic outcome #1 include the clean air measures, GHG measure, solid waste, clean and safe drinking water, and the wastewater treatment measure.

Strategic Outcome #2:

Establishment and management of wilderness areas and nature reserves for protection of biodiversity, for public understanding and appreciation, and for prudent use

Government Priority Supported:

- **Economy Goal:** Create climate for private sector and social enterprise economic growth to support OneNS economic goals.
- **Demographics** - Goal: Increase net interprovincial in-migration and international immigration levels; enhance wellness & health initiatives; enhance workforce participation of youth, older workers and marginalized communities; and **enhance communities and social well-being.**

NSE's mandate to protect wilderness areas and nature reserves is governed by the *Wilderness Areas Protection Act* and the *Special Places Protection Act*. Working with the Department of Natural Resources, in August 2013, "Our Parks and Protected Areas – A Plan for Nova Scotia" was released. The Plan identified lands to be protected, as well as specific goals for an integrated parks and protected areas system. This Plan supports the goal contained in the *Environmental Goals and Sustainable Prosperity Act* to protect at least 12 per cent of the total land mass of the Province by 2015.

Examples of Projects/Initiatives:

- **Parks and Protected Areas Plan**

  This Plan includes land that once protected will allow the province to meet the *Environmental Goals and Sustainable Prosperity Act* (*EGSPA*) goal of protecting at least 12 per cent by 2015. The first priority project for 2015-2016 is to continue the legal protection of areas included in the Plan.

  Protecting our provincial lands ensures that these areas continue to thrive and also that Nova Scotia's park system is updated to secure and strengthen its long-term success. As well, a sustainable protected areas system contributes to economic growth by providing a range of natural services, supporting outdoor recreation and tourism industries, and helping to brand Nova Scotia as a clean, green place in which to live, work, and do business.

- **Protected Areas Management**

  Another priority project in 2015-2016 is to assess ecological risks and public use opportunities in protected areas, and initiate management planning.

Performance Measure:

The Performance Measure in this document that shows progress in meeting strategic outcome #2 is the measure of total hectares of land protected through NSE's program options (*Wilderness Areas Protection Act, Special Places Protection Act* – ecological sites).

Strategic Outcome #3:

Recognition of the interdependence of economic, environmental and social health and the significance of environmental assets to long-term prosperity

Government Priorities Supported:

- **Fiscal** - Goal: Balanced budget during mandate and achieve sustainable government (2017-2018).
- **Economy** - Goal: Create climate for private sector and social enterprise economic growth to support OneNS economic goals.
- **Demographics** - Goal: Increase net interprovincial in-migration and international immigration levels; enhance wellness & health initiatives; enhance workforce participation of youth, older workers and marginalized communities; and **enhance communities and social well-being.**

One way NSE's work of protecting the environment and human health is closely linked to economic outcomes is through *EGSPA*. The overall long-term objective of the *Act* is to achieve sustainable prosperity. In 2012, amendments to the *Act* focused on strengthening the interconnectedness between the environment and the economy. Amendments to the foundation and principles of the *Act* included using a whole systems approach whereby all departments would be involved in meeting the commitments and vision of the *Act*.

Examples of Projects/Initiatives:

- **A Strategy for Greening the Economy**

  NSE continues to develop a strategy for 'greening' the economy that is consistent with other actions (OneNS, for example) and that promotes a shared commitment to sustaining a healthy environment that supports a strong, competitive economy and vibrant, thriving communities. The goal of the proposed "Strategy for Greening the Economy" is to provide guidance and strategies for furthering the greening of our overall economy. This goal supports the growing recognition that greening the overall economy brings not only environmental and resource sustainability, but also long-term economic benefits.

- **Solid Waste Regulations Review**

  NSE is reviewing its Solid Waste Regulations to encourage greater waste diversion, and to improve the fiscal sustainability of the overall solid waste system. Diverting waste from disposal not only protects the environment but also increases economic activity and job creation. Renewing and revising the regulations to enhance corporate stewardship through additional extended producer responsibility will help municipalities financially and contribute to the attainment of the goal of 300 kg/per person.

- **Drinking Water Program Renewal**

  NSE is renewing the public water supply components of the 2002 Drinking Water Strategy and will develop a ten-year implementation plan to ensure continuous improvement of the drinking water program. Protecting human health and the environment by renewing the drinking water program helps to ensure that individuals will continue to have clean and safe water for consumption, recreation, and livelihoods.

- **Wastewater Standards for Nova Scotia**

  Nova Scotia has developed a draft provincial wastewater standard based on the objectives of the Municipal Wastewater Effluent (MWWE) Strategy, and is now finalizing that standard, following consultation with municipalities. This process will involve a review of regulatory tools and processes while addressing "The Better Regulation Initiative." These new wastewater standards will improve upon our existing treatment of wastewater before it is discharged to the environment and reduce the risks posed to human and environmental health.

Performance Measures:

The Performance Measures in this document that show progress in meeting strategic outcome #3 are the measures around solid waste, drinking water, and the wastewater treatment facilities.

3. Budget Context

Nova Scotia Environment			
	2014-2015 Estimate	**2014-2015 Forecast**	**2015-2016 Estimate**
Program & Service Area	($thousands)	($thousands)	($thousands)
Gross Departmental Expenses:			
Administration	963	1,010	896
Policy	4,838	5,079	4,605
Compliance	12,345	11,679	12,082
Sustainability and Innovation	8.338	8,316	7,760
Total Gross Departmental Expenses	26,484	26,084	25,343
Additional Information:			
Ordinary Revenues, Fees and Recoveries	4,534	5,000	4,831
TCA Purchase Requirements	0	1,394	595
Provincial Funded Staff (FTEs)	249.9	228.6	237.9

4. Performance Measures

Our performance measures are intended to demonstrate the progress we make in achieving our mandate and government's priorities.

<table>
<tr><th colspan="2">MANDATE: ENVIRONMENT ACT</th></tr>
<tr><td>OUTCOME</td><td>Clean air for human health and environmental protection.</td></tr>
<tr><td>MEASURE</td><td>Annual total sulphur dioxide (SO_2) air emissions (tonnes) by Nova Scotia Power Inc. (NSPI).</td></tr>
<tr><td>DATA – BASE YEAR</td><td>1995 cap - 145,000 tonnes.</td></tr>
<tr><td>WHY THIS MEASURE?</td><td>SO_2 contributes to the formation of smog and acid precipitation, which have negative effects on human health and the environment. In Nova Scotia, most of the SO_2 emissions are produced by thermal electric power generation. The purpose of this measure and targets is to limit NSPI's (the largest emitter in the Province) SO_2 emissions to reduce smog and acid precipitation.</td></tr>
<tr><td>TARGET</td><td>Annual Target:
Prior to the November 2014 Air Quality Regulations amendments, NSPI was to achieve a level of SO_2 emissions no greater than 72,500 tonnes for all its facilities (fleet) combined, for each year from 2010 to 2014. This 72,500 tonnes level has been extended to and including 2019. This represents a 50 per cent reduction in SO_2 emissions from the 1995 cap.

Ultimate Target:
NSPI to achieve a level of SO_2 emissions required by amended Air Quality Regulations in November 2014. Starting in 2015, a multi-year compliance comprising annual maximums with hard caps every five years and annual individual unit (facility) caps is required. Ultimately, there will be a 86 per cent reduction in SO_2 emissions by 2030 from the 1995 cap.

<table>
<tr><th colspan="2">NSPI Annual Maximum Emissions</th></tr>
<tr><th>Year</th><th>Tonnes</th></tr>
<tr><td>2010-2019</td><td>72,500</td></tr>
<tr><td>2021-2024</td><td>36,250</td></tr>
<tr><td>2026-2029</td><td>28,000</td></tr>
<tr><td>2030</td><td>20,000</td></tr>
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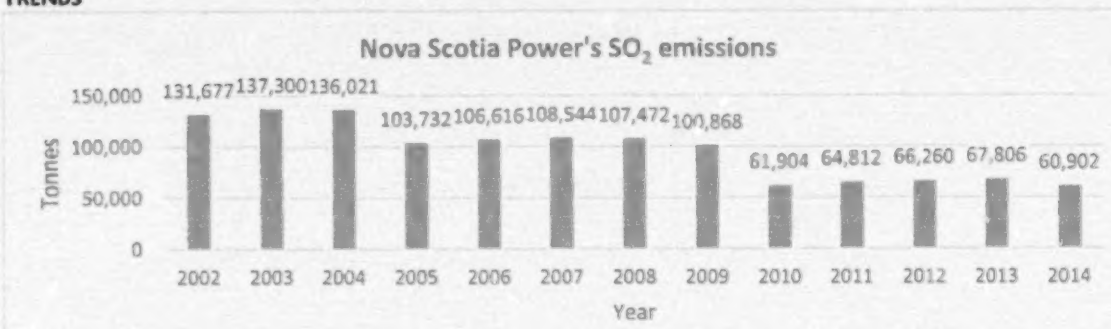
TRENDS



STRATEGIC ACTIONS TO ACHIEVE TARGET	• Work with NSPI to ensure their emissions are below the annual unit cap, annual maximum fleet cap and the multi-year fleet cap, while ensuring they are still able to meet other emission targets.

<table>
<tr><th colspan="2">MANDATE: ENVIRONMENT ACT</th></tr>
<tr><td>OUTCOME</td><td>Clean air for human health and environmental protection.</td></tr>
<tr><td>MEASURE</td><td>Annual total nitrogen oxide (NO_x) air emissions (tonnes) by Nova Scotia Power Inc. (NSPI).</td></tr>
<tr><td>WHY THIS MEASURE?</td><td>NO_x contributes to the formation of smog and acid precipitation, which have negative effects on human health and the environment. In Nova Scotia, NO_x emissions are produced by a variety of sources, including thermal electric power generation. The purpose of this measure and targets is to limit NSPI's NO_x emissions to reduce smog and acid precipitation. NSPI is a significant emitter of NO_x in the Province.</td></tr>
<tr><td>DATA – BASE YEAR</td><td>2000 - 26,706 tonnes</td></tr>
<tr><td>TARGET</td><td>Annual Target:
Prior to the November 2014 Air Quality Regulations amendments, NSPI was to achieve a level of NOx emissions no greater than 21,365 tonnes for all its facilities (fleet) combined, for each year from 2009 to 2014. This 21,365 tonnes level has been extended to and including 2019. This represents a 20 per cent reduction in NOx emissions from the 2000 base year.

Ultimate Target:
NSPI to achieve a level of NO_x emissions that are required under amendments to the Air Quality Regulations in 2014. Starting in 2015, a multi-year compliance with annual maximums with hard caps every five years is required. Ultimately, there will be a 69 per cent reduction in NO_x emissions by 2030 from 2000 levels.

<table>
<tr><th colspan="2">NSPI Annual Maximum Emissions</th></tr>
<tr><th>Year</th><th>Tonnes</th></tr>
<tr><td>2009-2019</td><td>21,365</td></tr>
<tr><td>2021-2024</td><td>14,955</td></tr>
<tr><td>2026-2029</td><td>11,500</td></tr>
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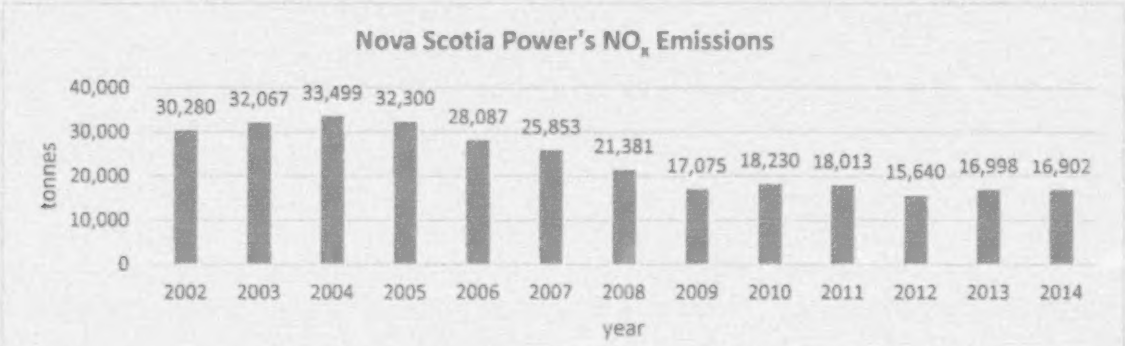
TRENDS



STRATEGIC ACTIONS TO ACHIEVE TARGET	• **Work with NSPI to ensure their emissions are below the annual maximum regulated cap and the multi-year cap, while ensuring they are still able to meet other emission targets.**

<table>
<tr><th colspan="2">MANDATE: ENVIRONMENT ACT</th></tr>
<tr><td>OUTCOME</td><td>Clean air for human health and environmental protection.</td></tr>
<tr><td>MEASURE</td><td>Meet progressive declining caps for mercury air emissions (kg) from NSPI's coal-fired electrical power stations.</td></tr>
<tr><td>WHY THIS MEASURE?</td><td>Mercury is a neurotoxin that persists in the environment and accumulates in the food chain. It can have negative effects on human health. Coal-fired electric power generation plants account for the vast majority of mercury emissions in Nova Scotia. The purpose of the target is to reduce the negative impacts of mercury on the environment and human health. NSPI is the largest mercury emitter in the Province.</td></tr>
<tr><td>DATA – BASE YEAR</td><td>2000 - 267 kg</td></tr>
<tr><td>TARGET</td><td>Maintain the emission cap for NSPI's coal-fired electrical power stations. The 2014 target is in line with the Canadian Council of Ministers of the Environment (CCME) Canada-wide standard for mercury, which is a 80 per cent reduction below the base year (267 kg.)
<table>
<tr><th>Year</th><th>Cap</th></tr>
<tr><td>2005</td><td>168 kg</td></tr>
<tr><td>2006</td><td>168 kg</td></tr>
<tr><td>2007</td><td>168 kg</td></tr>
<tr><td>2008</td><td>168 kg</td></tr>
<tr><td>2009</td><td>168 kg</td></tr>
<tr><td>2010</td><td>110 kg</td></tr>
<tr><td>2011</td><td>100 kg</td></tr>
<tr><td>2012</td><td>100 kg</td></tr>
<tr><td>2013</td><td>85 kg</td></tr>
<tr><td>2014</td><td>65 kg</td></tr>
<tr><td>2020</td><td>35 kg</td></tr>
<tr><td>2030</td><td>30 kg</td></tr>
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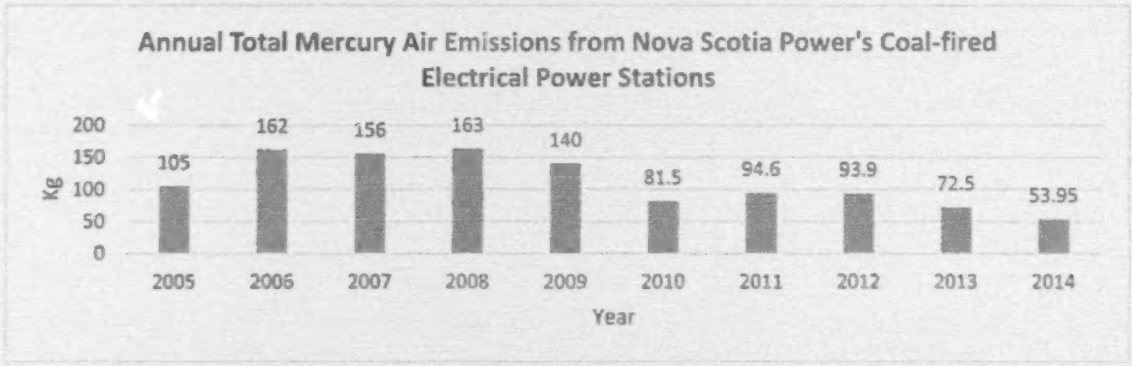
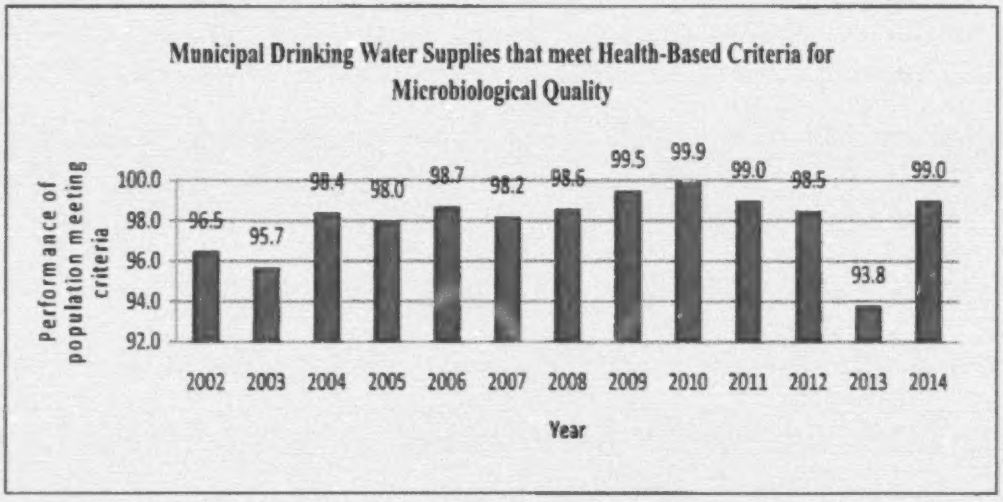


STRATEGIC ACTIONS TO ACHIEVE TARGET	• Work with NSPI to ensure their emissions are below the regulated cap and that they are still able to meet other emission targets. • Work with NSPI to ensure that any mercury diversion plan and actions are consistent with NSE's intent (economic, environmental and social) of the optional mercury diversion program in accordance with the corresponding regulations and standard.

MANDATE: *ENVIRONMENT ACT*	
OUTCOME	Clean and safe municipal drinking water.
MEASURE	Percentage of population served by municipal drinking water supplies that meet health-based criteria for microbiological quality.
WHY THIS MEASURE?	Approximately 65 per cent of Nova Scotians obtain their drinking water from municipal drinking water supplies. Health Canada, together with provincial health and environment ministries, has established the "Guidelines for Canadian Drinking Water Quality." This document specifies the health-based criteria for a number of parameters, including maximum acceptable concentrations for total coliforms and *E. coli* bacteria. NSE tracks the proportion of people serviced by municipal drinking water supplies who have access to drinking water that meets the health-based criteria for microbiological quality. This measure and target below demonstrates NSE's commitment to clean and safe drinking water for Nova Scotians.
DATA – BASE YEAR	**2001 - 96.5 % of the population that have municipal water.**
TARGET	All municipal drinking water supplies meet the health-based criteria for microbiological quality at all times during the calendar year.

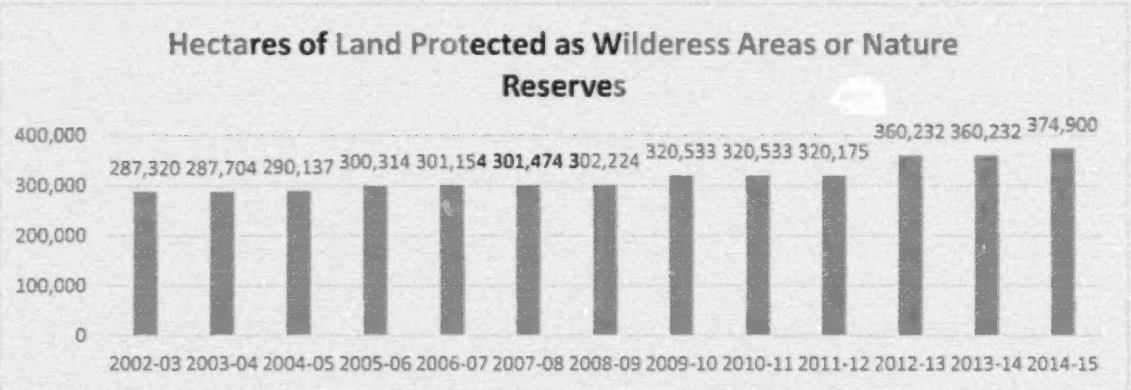
TRENDS



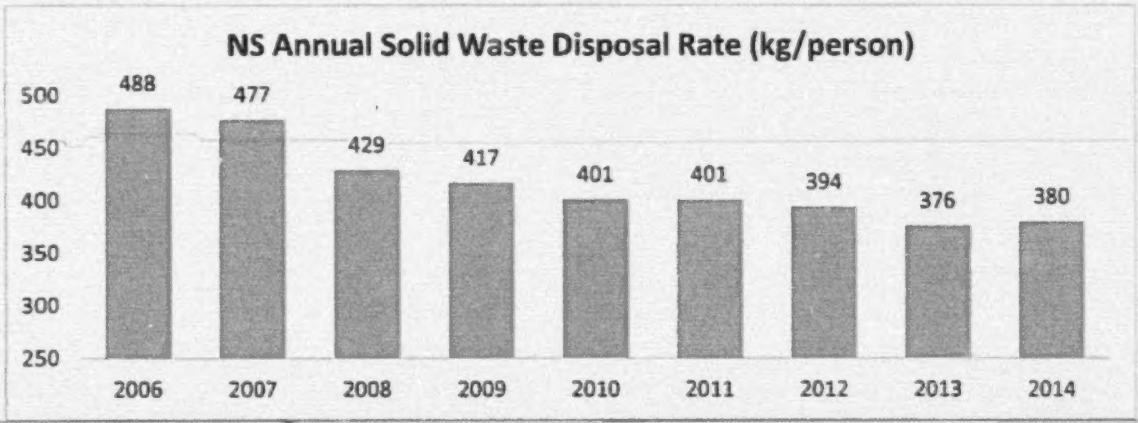
The percentage of the population served by municipal drinking water supplies that meet the health-based criteria for microbiological quality for 2014 was 99.0 per cent. This is an increase over the previous year when a boil water advisory was issued at a water supply that serves a large population. The 'population affected' by a boil water advisory was significantly lower in 2014, which increased the percentage of the population served who received water meeting the health-based criteria for microbiological quality.	
STRATEGIC ACTIONS TO ACHIEVE TARGET	• Continue to implement "Water For Life: Nova Scotia's Water Resource Management Strategy." • Review how Nova Scotia implemented the recommendations of the Walkerton Inquiry and identify areas for continuous improvement. • Update the Drinking Water Strategy. • Support development of municipal water supply protection plans.

Mandate: *Wilderness Areas Protection Act and Special Places Protection Act*	
OUTCOME	A system of protected natural areas with biodiversity effectively conserved and with a range of environmental and social benefits to Nova Scotians.
MEASURE	Total hectares of land protected through NSE's program options. (*Wilderness Areas Protection Act, Special Places Protection Act* – ecological sites).
WHY THIS MEASURE?	This measure tells us how much land is legally protected as wilderness areas under the *Wilderness Areas Protection Act*, and as ecological sites (nature reserves) under the *Special Places Protection Act*. Measuring the hectares of provincial land protected through departmental programs helps track the progress made in meeting provincial and national commitments to establish systems of protected areas. This measure also provides an indication of the state of biodiversity conservation in the province, as protected areas provide habitat for a wide range of species.
DATA – BASE YEAR	**2001 - 287,028 ha**
TARGET	**Annual:** Increase the hectares of land under various protection options. **Note**: Government has set a target to protect at least 12 per cent (662,360 ha) of Nova Scotia's total land mass by 2015. This includes NSE options as well as other qualifying legal protection.

TRENDS



STRATEGIC ACTIONS TO ACHIEVE TARGET	In order for lands in the Parks and Protected Areas Plan to be considered legally protected, they must be designated under appropriate legislation (*Wilderness Areas Protection Act, Special Places Protection Act* - as ecological sites, or *Provincial Parks Act).* This requires the completion of legal work and survey plans for individual sites. On December 15, 2014, government announced the legal protection of four wilderness areas and sixteen nature reserves from the 2013 Parks and Protected Areas Plan. Representing more than 14,000 hectares, the portion of the Nova Scotia land base now under protection is about 9.58 per cent - up from 9.32 per cent in 2013. Strategic actions to advance this Plan: • Where required by the Plan, complete wood supply analysis, and address recreational access and third party rights such as mineral exploration, and drinking water and electrical infrastructure management. • Complete survey plans and legal requirements and seek Government approval to legally designate new protected areas under appropriate protection legislation as wilderness areas, nature reserves, or provincial parks. • License activities associated with existing rights and interests. • Advance discussions with Nova Scotia Mi'kmaq in relation to protected areas access and use.

MANDATE: *ENVIRONMENT ACT* AND *ENVIRONMENTAL GOALS AND SUSTAINABLE PROSPERITY ACT*	
OUTCOME	Reduced solid waste disposal for a better environment and stronger economy.
MEASURE	Annual solid waste disposal rate per capita* (Kg/person). Our goal is 300 kg/person by 2015 and it is tracked by using the reports from the seven Nova Scotia municipal solid waste regions.
WHY THIS MEASURE?	A goal of 300 kg/person was adopted as a challenging goal that will allow Nova Scotia to maintain and strengthen its claim to having the lowest disposal rate in Canada. This demonstrates our desire to divert resources from disposal sites in order to protect the environment and create new jobs and businesses. We are currently 50 per cent below the national average.
DATA – BASE YEAR	**2006 - 488 kg/capita**
TARGET	A disposal rate of no greater than 300 kg per person by 2015.
TRENDS[2] (2015)	
STRATEGIC ACTIONS TO ACHIEVE TARGET	• Potential changes to the Solid Waste Regulations were identified by staff and consulted upon in 2014. • NSE is collaborating with municipalities to prepare new regulations. • In combination with ongoing efforts by the municipalities, new regulatory amendments will further position Nova Scotia to achieve the 300 kg/person goal, while enhancing the financial viability of the province's solid waste system.

[2] Provincial per capita average determined from achievement reported by the seven Nova Scotia municipal solid waste regions.

MANDATE: *ENVIRONMENTAL GOALS AND SUSTAINABLE PROSPERITY ACT*	
OUTCOME	Reduced GHGs into the atmosphere for positive impacts on the economy, ecosystems, and human health.
MEASURE	Annual provincial GHG output, as measured by the National GHG Inventory Release (NIR). Beginning with the report for year 2010, NSE uses electricity GHG data reported directly to NSE by Nova Scotia Power Inc. (independently verified), as it is more precise than NIR estimates for that sector. For GHG from all other sectors, NSE will continue using NIR data to compile the total.
WHY THIS MEASURE?	Continued warming from the release of GHGs into the atmosphere is expected to have substantial negative impacts on the economy, and on our ecosystem and human health. The target of 17.1 mega (m) tonnes is 10 per cent below 1990 GHG emissions levels in Nova Scotia. This target was adopted from the regional target in the New England Governors/Eastern Canadian Premiers 2001 "Climate Change Action Plan." Nova Scotia, as well as the other eastern Canadian provinces and New England states, made a commitment to meet this regional target.
BASELINE YEAR	**1990 - 19.1 m tonnes (NIR)**
TARGET (TOTAL GHG)	2020 - 17.1 m tonnes or less (i.e. 10 per cent below 1990 level)
TRENDS:	2005 - 23.1 m tonnes - Source NIR 2007 - 23.3 m tonnes - Source NIR 2008 - 20.8 m tonnes - Source NIR 2009 - 20.7 m tonnes - Source NIR 2010 - 20.4 m tonnes - Source NIR; NSPI annual GHG report 2011 - 20.7 m tonnes - Source NIR; NSPI annual GHG report 2012 - 19.0 m tonnes - Source NIR; NSPI annual GHG report • GHG from Nova Scotia electricity production, the Province's largest single source of GHG, is regulated in Nova Scotia with progressively steeper reductions starting with the year 2010. This Regulation combined with the Renewable Energy Standard (2007) for electricity generation has reduced electricity GHG from peak of 11.4 m tonnes in 2005, to 8.6 m tonnes in 2011. Electricity GHG reduction is on target to meet or exceed our 2020 goal of no more than 7.5 tonnes.

	• In 2012, the latest year reported, our total GHG decreased to 19.0 tonnes after several years of no decline during the recovery from the 2008 recession. As the economy recovers, there is more energy demand, which creates more emissions unless cleaner sources are used. Cleaner energy sources are being used in Nova Scotia to meet the increasing stringency in Nova Scotia's regulation of electricity GHGs plus the "Renewable Energy Standard" for electricity production (Department of Energy).
STRATEGIC ACTIONS TO ACHIEVE TARGET	• Complete our commitments of the 2009 "Climate Change Action Plan" (over 90 per cent complete or ongoing). • Ensure monitoring and compliance of each compliance period of the 2014 Equivalency Agreement with Environment Canada for the electricity sector. • Support the full implementation of the Renewable Energy Standard of the Department of Energy (40% renewable electricity sources by 2020, up from 10% in 2007). • Support implementation of the Sustainable Transportation Strategy. • Incorporate GHG emissions as a consideration in Environmental Assessments of large industrial projects. • Increase understanding of GHG sinks, sources, and opportunities in the Nova Scotia forestry and agriculture sectors.

MANDATE: *ENVIRONMENTAL GOALS AND SUSTAINABLE PROSPERITY ACT*	
OUTCOME	Clean air for human health and environmental protection.
MEASURE	Ambient ground-level ozone (O_3) in parts per billion (ppb) and fine particulate matter (PM) in micrograms per cubic metre ($\mu g/m^3$)*, measured annually and averaged over three consecutive years. Measurements of ground-level ozone and fine particulate matter are compared to the Canadian Ambient Air Quality Standards (CAAQS) to determine achievement, and air zone management level and actions. CAAQS achievement and management levels are determined by the greatest pollutant measurement (8 hr O_3, 24 hr PM2.5*, or Annual PM2.5) within each air zone. *$\mu g/m^3$ - means micrograms per cubic meter and is a measurement of density of PM 2.5 (less than 2.5 microns – i.e. airborne particles that are 2.5 microns or less in diameter).

Air Management Threshold Values and Actions
(Management stringency increases if level of air quality deteriorates)

Management Level	Management Actions	Air Management Threshold Values		
		Ozone (ppb)	$PM_{2.5}$ 24-hour ($\mu g/m^3$)	$PM_{2.5}$ Annual ($\mu g/m^3$)
Red	Actions for **Achieving** Air Zone CAAQS	63	28	10
Orange	Actions for **Preventing** CAAQS **Exceedance**	56	19	6.4
Yellow	Actions for **Preventing** air quality **Deterioration**	50	10	4
Green	Actions for **Keeping** Clean Areas Clean	0	0	0

Note: The CAAQS, new this year, replace and are more stringent than the previously used Canada-wide Standards (CWS) for Particulate Matter and Ozone.

<table>
<tr><td>WHY THIS MEASURE?</td><td>Ground-level ozone and fine particulate matter are air pollutants that contribute to the formation of smog and degraded air quality, which can have negative effects on human health and the environment. The purpose of these measures is to better protect human health and the environment.</td></tr>
<tr><td>DATA – BASE YEAR</td><td>2012-2014 (This will be the first year this measure, for the four air zones, is calculated using the new standard).</td></tr>
<tr><td>TARGET</td><td>Achieve CAAQS or less for ground-level ozone and fine particulate matter in each of four air zones in Nova Scotia. There are three CAAQS Standards for ground-level ozone and fine particulate matter:

• 63 ppb ground-level ozone or less, three-year average of the annual 4th highest daily maximum 8-hour average concentration, by 2015.

• 28 µg/m^3 or less of PM 2.5, three-year average of the annual 98th percentile (98th percentile of a set of data is the point where 98% of the data is below it) of the daily 24-hour average concentrations, by 2015.

• 10.0 µg/m^3 or less of PM 2.5, three-year average of the annual average concentrations, by 2015.</td></tr>
<tr><td>TRENDS</td><td><table>
<tr><th rowspan="2">Year</th><th rowspan="2">Number of air zones achieving CAAQS</th><th colspan="4">Air zone Management Level Determination (Red, Orange, Yellow or Green)</th></tr>
<tr><th>Central</th><th>Eastern</th><th>Northern</th><th>Western</th></tr>
<tr><td>2012-2014*</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
*Due to the new method of reporting, data is expected to be available late spring 2015.</td></tr>
<tr><td>STRATEGIC ACTIONS TO ACHIEVE TARGET</td><td>• Where applicable, work together with stakeholders to maintain air quality, achieve the CAAQS, and drive continuous improvements in air quality.
• Where applicable, work with emitters to reduce emissions that contribute to the formation of ground-level ozone and particulate matter.
• Maintain the provincial ambient air monitoring network to measure and report on achievement.</td></tr>
</table>

MANDATE: *ENVIRONMENTAL GOALS AND SUSTAINABLE PROSPERITY ACT*	
OUTCOME	Clean surface water for human health and environmental protection.
MEASURE	Percentage of wastewater treatment facilities that provide at least primary treatment.
WHY THIS MEASURE?	In Nova Scotia, the discharge of untreated wastewater results in beaches closed to swimming, waters closed to shellfish harvesting, and the aesthetics associated with raw discharges affecting our ecotourism potential. Our streams, estuaries and coastal waters can be threatened by the substances found in inadequately treated wastewater and drinking water can become contaminated. By ensuring that all facilities have at least primary treatment, we ensure a level of protection against the adverse effects of wastewater discharges.
DATA – BASE YEAR	**2009 - 90%**
TARGET	All municipal wastewater treatment facilities provide at least primary treatment by 2020.
TRENDS	2010 - 90% 2011 - 91% 2012 - 92% 2013 - 92% 2014 - 92%
STRATEGIC ACTIONS TO ACHIEVE TARGET	• Work with municipalities to implement the Canada-wide Municipal Wastewater Effluent (MWWE) Strategy. • Complete and begin implementation of a new Provincial Wastewater Standard.